Original Article

ASSESSMENT OF BREAST CANCER RISK FACTORS IN ASYMPTOMATIC HOSPITAL STAFF WOMEN AGED 32-59: A DESCRIPTIVE REPORT

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ABSTRACT

Objective: Iranian breast cancer patients are relatively younger than their Western counterparts. The objective of the present study was to investigate risk factors for breast cancer in Iranian women and compare it with other data driven from other studies.

Methods: A study was conducted in April 2008 in Tehran, Iran. Demographical data and risk factor related information, including data from their mammograms were collected using a questionnaire.

Results: In all, 109 participants were interviewed. The mean age of participants was 40.48 ± 0.56 years. 1.8% of women were unmarried, while 78% were married and 20.2% were divorced/widowed. The mean age for menarche was 13.34 ±1.47 years and 46.89±4.98 for the menopause, respectively. The mean parity time was 2.36±1.13 and breastfeeding in women was 23.27±14.16 months. About 5.5% of the participants used oral contraceptive as a method for contraception. 8.3% of women experienced menopause, at the mean age of 46.89±4.98. 33.3% of menopaused women, used Hormone Replace Therapy (HRT).Moreover, 8.3% of women had a positive history of breast cancer in their family. Of those women on whom mammography was done, 10.1% had breast mass in radiological findings, mostly in favour of fibrocystic change. In 20.2% of participants, further investigation was advised.

Conclusion: The findings of the present study were in accordance with other studies done in Iran and in some aspects in tune with other studies about breast cancer in other countries. However, more multicentric larger scale studies should be conducted in Iran to determine a pattern for breast cancer in Iranian women.

KEY WORDS: Breast cancer, Women, Risk factor.

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INTRODUCTION

Public health programs aim to reduce morbidity and mortality from various diseases through primary and secondary prevention strategies. Primary prevention strategies focus on modifying lifestyle factors that may reduce risk, such as exercising regularly and maintaining a healthy weight. Secondary prevention strategies focus on early detection of cancer by

promoting regular screening and awareness of symptoms of cancer in order to provide medical intervention at early, curable stages of disease.

However, these strategies are not 100% effective, and currently no known prevention strategies will completely eliminate all risk for developing or dying from breast cancer. In the population of Iranian woman, it is expected that conservatively about 1.5 out of every 1,000 women will have breast cancer, comparing with the range of breast cancer from other countries.[1-3] According to the American Cancer Society, approximately 200,000 cases of breast cancer and 23,000 cases of ovarian cancer are diagnosed in the United States each year.[4] While this prevalence rate is lower than breast cancer prevalence in older women, breast cancer in younger women remains a tremendous clinical challenge and is the leading cause of cancer death for women between the ages of 15 and 54.[5]

In absolute numbers, approximately 12,000 new cases are diagnosed each year in women under age 40.[6] Public health programs aim to reduce morbidity and mortality from these diseases through primary and secondary prevention strategies. Primary prevention strategies focus on modifying lifestyle factors that may reduce risk, such as exercising regularly and maintaining a healthy weight. Secondary prevention strategies focus on early detection of cancer by promoting regular screening and awareness of symptoms of cancer in order to provide medical intervention at early, curable stages of disease, However, these strategies are not 100% effective, and currently no known prevention strategies will completely eliminate all risk for developing or dying from breast or ovarian cancer.

Despite the need for improved breast cancer detection in younger women, annual screening mammography, which has been shown to decrease breast cancer mortality and morbidity in women over age 40, is not recommended to average risk women between the ages of 30-39. This is because the low incidence of breast cancer, combined with a 10-15% lower mammographic sensitivity in women under age 40 does not support routine screening of average risk young women using mammography. Because no screening technology currently addresses the population of women under age 40, Clinical Breast Exam (CBE) is the only modality that is routinely used to screen this population. CBE, however, is limited in this capacity because it is not considered sensitive for small lesions, is highly dependent upon the examiner, and is difficult to compare from year to year. Accordingly, studies show that most women under 40 detect their own cancers, with self-detected cancers occurring at a relatively advanced stage.[7, 8]

In general, delayed detection leads to more aggressive and costly treatment regimens as well as greater morbidity and lower survival rates.[9,10] Mammography screening is offered to women under the age of 40 if they have known familial, genetic, or personal risk factors. But, it should be recognized that the vast majority of women who develop breast cancer (90%) do not have one of these known risk factors, and thus they are generally screened with clinical and/or self breast exam only.[11-13]

Because the reliance upon known risk factors as a criterion for additional screening can be used as a way to identify some women who develop breast cancer, we set up a screening program, a combination of breast examination by an expert physician and evaluation of risk factors on 109 personel staff on April 2008.The use of risk assessment methods can identify elevated breast cancer risk in women who otherwise would be overlooked by the current standard of care, but who are likely to benefit from additional surveillance or imaging.

METHODOLOGY

This study was conducted in April 2008 in Tehran, Iran. The cases were chosen randomly from hospital staff. Women with hysterectomy and artificial menopause were excluded from the study. Our study was approved by the medical ethics committee and written consent was obtained from all participants.

All women were interviewed by one investigator. Demographical and risk factor data were

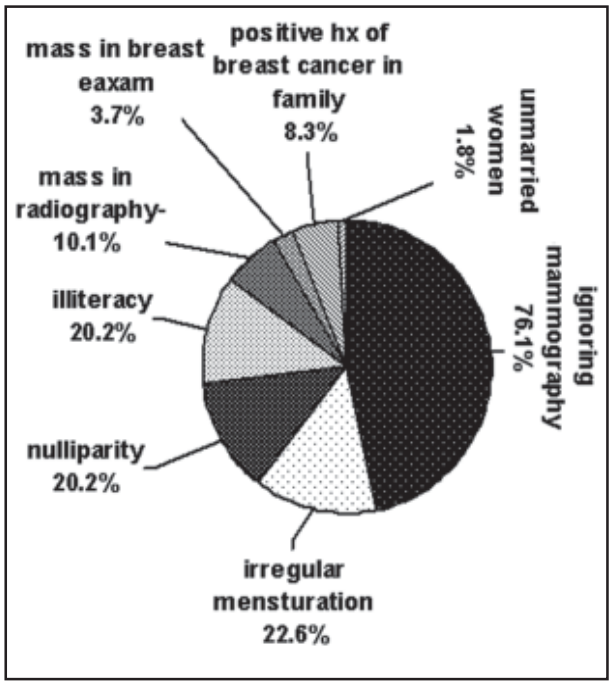

Figure-1: The graph shows the risk factors for breast cancer. The sum exceeds 100%, because some women had two or more risk factors at the same time.

collected using a short structured questionnaire, including information on age, educational level, marital status, occupation, family history of breast cancer (first-degree relatives), age at menarche, parity, oral contraceptive or any other methods use for contraception, age at first and last full-term pregnancy, menopausal status, age at menopause and any changes in breast examination , such as enlarged lymph nodes in axillary or supra and infraclavicular region, any palpable lump in each breast and asymmetry in breast appearance. Women were classified as menopausal if they had not menstruated during the six months before the date of data collection. A full-term pregnancy was a pregnancy lasting eight months or longer.

RESULTS

In all, 109 women of hospital personnel were interviewed.Of this 81.7% of participants worked in clinical sections of hospital, and 18.3% worked in non-clinical sections. We divided risk factors for breast cancer into two groups to hereditary risk factor (non-modifiable) and modifiable ones.

Table-I: Non-modifiable Risk factors for breast cancer in 109 participants

Risk factors	*Values*
Age groups (Mean)	40.48 ± 0.56
Age at menarche (Mean)	13.34 ±1.47
Parity	
Parous	87(79.8%)
Nulliparous	22(20.2%)
Mean age at first full term pregnancy	24.56±4.31
Mean age at second full term pregnancy	30.38 ± 5.25
Menopausal status	
Premenopausal	100 (91.7%)
Postmenopausal	9 (8.3%)
Mean age at menopause	46.89 ± 4.98
Menstruation condition	
Regular	77.4%
Irregular	22.6%
Pregnancy times	
1	17 (19.5%)
2	41 (47.1%)
3	17 (19.5%)
>3	12 (13.8%)
Mean ± SD	2.36 ± 1.13
History for breast cancer in family	
Yes	9 (8.3%)
No	100 (91.7%)
Marital status	
Married	85 (87%)
Widowed/divorced	22 (20.2%)
Never married	2 (1.8%)

A summary of hereditary risk factors for breast cancer such as mean age of participants, their marital status, the mean age at marriage, regularity of menstrual periods, mean parity time, the mean age for menarche, mean menopause age and positive history of breast cancer in the family are reflected in Table-I. None of the participants gave a history of smoking. The mean duration time for breastfeeding in women was 23.27±14.16 months, (ranging 1 to 84 months) with regard the fact that some women

had more than a child, or they did not feed their child for whole two years, as it is custom in Iranian population. Moreover, 28.4% of women gave a history of previous abortion.

Table-II reflects non-modifiable risk factors such as the education level for staff, contraception use methods, Hormone Replace Therapy (HRT) after menopause and regular mammography screening, The participants were examined to detect any asymmetry, palpable lump, enlarged lymph node in infra and supraclavicular or axillary region, asymmetry, local inflammation, discharge or deformity. Eleven patients (10.1%) had breast mass in radiological findings, mostly suggesting fibrocystic change. In 20.2% of participants, further investigation was advised. (Table-II) In Figures I & II, we ordered risk factors by modifiable and non-modifiable and their frequency.

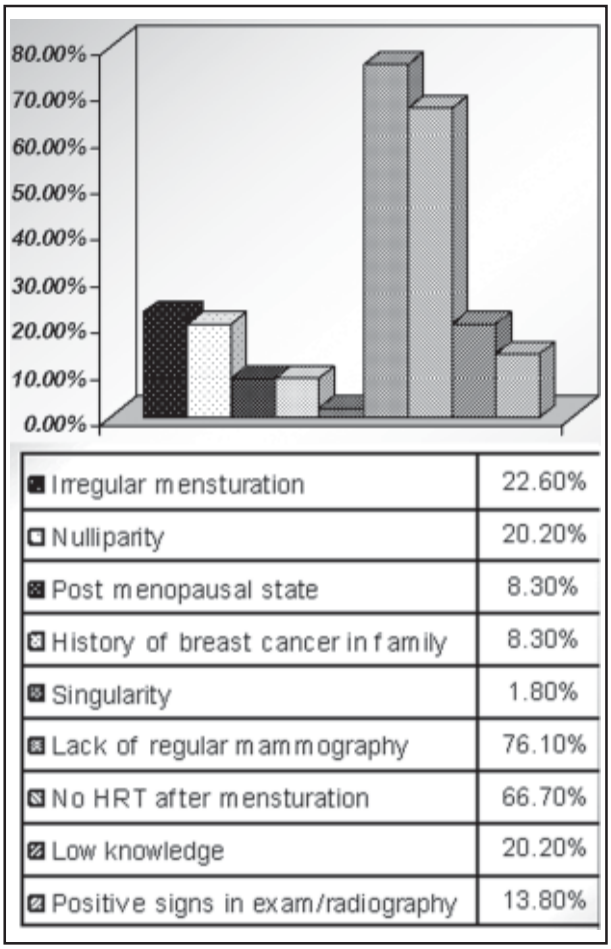

Figure-2: The graph shows the risk factors for breast cancer (modifiable and non-modifiable).

Table-II: Modifiable risk factors for breast cancer in 109 participants

Risk factors	*Frequency (%)*
Educational level	
Illiterate	20.2%
Diploma	31.7%
University	48.1%
HRT replacement after menopause	
Yes	3 (33.3)
No	6 (66.7)
Contraceptive methods	
No methods	16 (14.7)
OCP	6 (5.5)
IUD	19 (17.4)
Other methods	68 (62.4)
History of previous mammography	
No	83 (76.1)
One time	21 (19.3)
Two times	4 (3.7)
Three times	1 (0.9)
Palpable mass in breast exam	
Yes	4 (3.7)
No	105 (96.3)
Breast mass in radiography	
Yes	11 (10.1)
No	98 (89.9)
Further advised medial investigation	
No further investigatio	87 (79.8)
Mammography	15 (13.8)
Mammography + FNA	1 (0.9)
FNA	2 (1.8)
Sonography	3 (2.8)
Excisional biopsy	1 (0.9)

DISCUSSION

Breast cancer patients in Iran are rather younger, and the results of previous studies about breast cancer in Iran, suggest that singularity and a positive family history of breast cancer are potential risk factors for breast cancer in Iranian women. These results approve other surveys that positive family history of breast cancer is a strong risk factor for

breast cancer at young age,[14] although it has been stated that this has a little effect on the patients survival and mortality from breast cancer.[15]

On the other hand, according to the findings from the studies conducted in Iran, it might be considered that the relatively high proportion of young breast cancer cases in Iran is most likely due to a young population structure and to a combination of high age at menarche and low age at first pregnancy.

A study from the United States[16] also points to the matter that in some Asian subgroups such as the Vietnamese, women diagnosed with breast cancer tend to be younger than those from other ethnic groups, with half of the diagnoses occurring in women younger than 50 years. Never married women have higher risk for breast cancer. In most studies single and nulliparous married women were found to have a similar increased risk for breast cancer as c ompared with parous women of the same age.[17] It may be imagined that marital status is not a determining factor for increased or reduced breast cancer risk, and rather the main protective effect is from early first full-term pregnancy. Furthermore, some studies suggest that there is a relation between marital status and parity,[18] indicating enhanced effect of parity on breast cancer risk with pregnancy. Studies have proven the probable relation between age, family history of breast cancer and parity.[19]

In addition, studies have reported that nulliparity reduces risk for breast cancer at younger age and elevates risk in the elderly.[20,21] For example, studies have proved that breast cancer is higher risk related in women with a positive family history who take oral contraceptive.[22,23] Even though the results cannot be generalized, the studies done in Iran to determine a pattern for breast cancer, suggest the associations between some known risk factors for breast cancer may differ in Iran as compared with Western countries, and that familial breast cancer in young Iranian breast cancer patients deserves further investigation.

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